## **Recovery Plan Action Status**

Plan Name: Recovery Plan for Serpentine Soil Species of the San Francisco Bay Area

Plan Status: Final Plan Date: 30-Sep-98 Lead Agency: USFWS

Lead Office: Sacramento Fish And Wildlife Office 414-6600)

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Bay checkerspot butterfly (Euphydryas editha bayensis), Tiburon mariposa lily (Calochortus iiburonensis), Metcalf Canyon ewelflower (Streptanthus albidus ssp. albidus), Pennell's bird's-beak (Cordylanthus elenuis ssp. capillaris), San Mateo woolly sunflower (Eriophyllum atilobum), Coyote ceanothus (Ceanothus (Ceanothus (Ceanothus ierrisae), White-rayed pentachaeta (Pentachaeta bellidiflora), Presidio clarkia (Cirsium fontinale var. fontinale), Tiburon paintbrush (Castilleja affinis ssp. neglecta), Marin dwarf-flax (Hesperolinon congestum), Tiburon jewelflower (Streptanthus niger), San Mateo thornmint (Acanthomintha obovata ssp. dudtonii), Santa Clara Valley dudleya (Dudleya (Dudleya (Dudleya (Dudleya (Dudleya (Dudleya (Streptanthus dudleya (Dudleya (Dudleya (Streptanthus dudleya (Dudleya (Dudleya (Dudleya (Streptanthus dudleya (Dudleya (Dudleya (Streptanthus dudleya (S	2	1.1	Establish cooperative programs with participants from the public and private sector	Ongoing Not Current	FY 1995 - FY 1999		U.S. Fish and Wildlife Service, California Department of Fish and Game	Other: Information and Education	Internal Technical Assistance	Cooperative program established with Stuart Weiss and San Mateo Parks for reintroduction of Bay Checkerspot into Edgewood Park.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Bay checkerspot butterfly	2	1.2.1	Develop and implement outreach	Not Started			U.S. Fish and Wildlife Service	Other: Information and Education	Internal Technical Assistance	
(Euphydryas editha			plans				Wilding Service	and Education	Assistance	
bayensis), Tiburon			piaris							
mariposa lily										
(Calochortus										
tiburonensis), Metcalf Canyon										
ivietcair Canyon										
jewelflower										
(Streptanthus										
albidus ssp.										
albidus), Pennell's										
bird's-beak										
(Cordylanthus										
tenuis ssp.										
capillaris), San										
Mateo woolly										
sunflower										
(Eriophyllum										
latilobum), Coyote										
ceanothus										
(Ceanothus										
ferrisae), White-										
rayed pentachaeta										
(Pentachaeta										
bellidiflora),										
Presidio clarkia										
(Clarkia										
franciscana),										
Fountain thistle										
(Cirsium fontinale										
var. fontinale),										
Tiburon paintbrush										
(Castilleja affinis										
ssp. neglecta),										
Marin dwarf-flax										
(Hesperolinon										
congestum),										
Tiburon jewelflower										
(Streptanthus										
niger), San Mateo										
thornmint										
(Acanthomintha										
obovata ssp.										
duttonii), Santa										
Clara Valley										
dudleya (Dudleya										
setchellii)		1						1	1	

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Bay checkerspot butterfly (Euphydryas editha bayensis), Tiburon mariposa lily (Calochortus tiburonensis), Metcalf Canyon jewelflower (Streptanthus albidus ssp. albidus), Pennell's bird's-beak (Cordylanthus tenuis ssp. capillaris), San Mateo woolly sunflower (Eriophyllum latilobum), Coyote ceanothus (Ceanothus (Ceanothus ferrisae), White-rayed pentachaeta bellidiflora), Presidio clarkia (Fanciscana), Fountain thistle (Cirsium fontinale var. fontinale), Tiburon paintbrush (Castilleja affinis ssp. neglecta), Marin dwarf-flax (Hesperolinon congestum), Tiburon jewelflower (Streptanthus niger), San Mateo thornmint	Action Priority #	Action #  1.2.2	<b>Description</b> Develop and	Ongoing Not Current	FY 1995 - FY 1999	Date		Work Type Other	Internal Technical Assistance	Action Comments
(Acanthomintha obovata ssp. duttonii), Santa Clara Valley dudleya (Dudleya setchellii)										

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Bay checkerspot butterfly (Euphydryas editha bayensis), Tiburon mariposa lily (Calochortus tiburonensis), Metcalf Canyon jewelflower (Streptanthus albidus ssp. albidus), Pennell's bird's-beak (Cordylanthus tenuis ssp. capillaris), San Mateo woolly sunflower (Eriophyllum latilobum), Coyote ceanothus (Ceanothus ferrisae), White-rayed pentachaeta (Pentachaeta bellidiflora), Presidio clarkia (Clarkia franciscana), Fountain thistle (Cirsium fontinale var. fontinale), Tiburon paintbrush (Castilleja affinis ssp. neglecta), Marin dwarf-flax (Hesperolinon congestum), Tiburon jewelflower (Streptanthus niger), San Mateo thornmint (Acanthomintha obovata ssp. duttonii), Santa Clara Valley dudleya (Dudleya setchellii)	2	1.2.3	Encourage and assist counties and landowners to develop and implement Habitat Conservation plans	Ongoing Current	FY 1995 - FY 1999		San Mateo County, California, Stanislaus County, California, Marin County, California, San Francisco County, California, Santa Clara County, California, Contra Costa County, California, Alameda County, California, Sonoma County, California, U.S. Fish and Wildlife Service, California Department of Fish and Game, Private landowners	Management: Planning	Internal Technical Assistance	Santa Clara County is developing a HCP.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Bay checkerspot butterfly (Euphydryas editha bayensis), White-rayed pentachaeta (Pentachaeta bellidiflora), Fountain thistle (Cirsium fontinale var. fontinale), Marin dwarf-flax (Hesperolinon congestum), San Mateo thornmint (Acanthomintha obovata ssp. duttonii)	1	2.1.10	Secure and protect serpentine habitat in Edgewood Natural Preserve (San Mateo County) for multiple species	Ongoing Current			U.S. Fish and Wildlife Service	Acquisition: Easement	Species Expert	For San Mateo thornmint, Creekside Center for Earth Observation (private consultants) has conducted seed collection, soil treatments, and seed sowing to increase number of plants. In 2011, 5400 seeds were collected from Edgewood Regional Park and cleaned. For Bay Checkerspot, Creekside Center for Earth Observation and volunteers have kept Edgewood Park invasive grasses mowed and abated to allow dwarf plantain to grow (host plant).
Bay checkerspot butterfly (Euphydryas editha bayensis), Fountain thistle (Cirsium fontinale var. fontinale), Marin dwarf-flax (Hesperolinon congestum), San Mateo thornmint (Acanthomintha obovata ssp. duttonii)	1	2.1.11	Secure and protect serpentine habitat on Pulgas Ridge (San Mateo County) for multiple species	Not Started			California Department of Transportation, San Francisco Water Department, U.S. Fish and Wildlife Service, California Department of Fish and Game	Acquisition: Easement	Internal Field Assistance	
San Mateo woolly sunflower (Eriophyllum latilobum), Marin dwarf-flax (Hesperolinon congestum)	1	2.1.12	Secure and protect serpentine habitat in San Mateo Creek area (San Mateo County) for multiple species	Not Started			California Department of Transportation, San Francisco Water Department, San Mateo County, California, U.S. Fish and Wildlife Service, California Department of Fish and Game	Acquisition: Easement	Internal Field Assistance	

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Tiburon paintbrush (Castilleja affinis ssp. neglecta), Marin dwarf-flax (Hesperolinon congestum)	1	2.1.3	Secure and protect serpentine habitat in Golden Gate National Recreation Area for multiple species	Ongoing Not Current	FY 1995 - FY 1999		National Park Service, U.S. Fish and Wildlife Service	Acquisition: Management Agreement	Internal Field Assistance	
Marin dwarf-flax (Hesperolinon congestum)	1	2.1.4	Secure and protect serpentine habitat at Mt. Burdell (Marin County) for multiple species	Not Started			Marin County Open Space District, U.S. Fish and Wildlife Service, California Department of Fish and Game	Acquisition: Easement	Internal Field Assistance	
Tiburon paintbrush (Castilleja affinis ssp. neglecta), Marin dwarf-flax (Hesperolinon congestum), Tiburon jewelflower (Streptanthus niger)	1	2.1.5	Secure and protect serpentine habitat on Tiburon Peninsula Middle Ridge (Marin County) for multiple species	Not Started			City of Tiburon, California, Marin County, California, U.S. Fish and Wildlife Service, California Department of Fish and Game	Acquisition: Easement	Internal Field Assistance	
Tiburon mariposa lily (Calochortus tiburonensis), Tiburon paintbrush (Castilleja affinis ssp. neglecta), Marin dwarf-flax (Hesperolinon congestum)	1	2.1.6	Secure and protect serpentine habitat on Ring Mountain (Marin County) for multiple species	Not Started			Marin County, California, U.S. Fish and Wildlife Service, California Department of Fish and Game	Acquisition: Easement	Internal Field Assistance	
Tiburon paintbrush (Castilleja affinis ssp. neglecta), Marin dwarf-flax (Hesperolinon congestum), Tiburon jewelflower (Streptanthus niger)	1	2.1.7	Secure and protect serpentine habitat in St. Hilary's area (including Harroman Property) for multiple species	Not Started			Tiburon Landmark Society, Marin County, California, U.S. Fish and Wildlife Service, California Department of Fish and Game	Acquisition: Easement	Internal Field Assistance	
Presidio clarkia (Clarkia franciscana), Marin dwarf-flax (Hesperolinon congestum)	1	2.1.8	Secure and protect serpentine habitat on the Presidio (San Francisco County) for multiple species	Ongoing Current	FY 1995 - FY 1999		National Park Service, U.S. Fish and Wildlife Service	Management	Internal Field Assistance	2004 Comment: Study of management ongoing. 2011: Introduction of Marin dwarf flax is ongoing at Inspiration Pt on the SF Presidio. Conducted by Presidio Trust and Creekside Center for Earth Observation.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Bay checkerspot butterfly (Euphydryas editha bayensis), Marin dwarf-flax (Hesperolinon congestum)	2	2.1.9	Secure and protect serpentine habitat at Buri Buri Ridge (Santa Clara County) for multiple species				San Francisco Water Department, U.S. Fish and Wildlife Service, California Department of Fish and Game	Acquisition: Easement	Internal Field Assistance	
Marin dwarf-flax (Hesperolinon congestum)	2	2.2.13	Secure and protect serpentine habitat at Pine Mountain (Carson Ridge area) (Marin County) for Hesperolinon congestum	Not Started			Marin Municipal Water District, U.S. Fish and Wildlife Service, California Department of Fish and Game	Acquisition: Easement	Internal Field Assistance	
Marin dwarf-flax (Hesperolinon congestum)	2	2.2.9	Secure and protect surpentine habitat at Big Rock area (Marin County) for Hesperolinon congestum	Not Started			Marin County, California, U.S. Fish and Wildlife Service, California Department of Fish and Game	Management: General	Internal Field Assistance	This site is part of George Lucas Studio. A sect 7 was done on this. Some Hesperolinon was proposed to be protected as mitigation for loss of the plants from construction of a reservoir.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Bay checkerspot	1	3.1	Develop and	Ongoing Current	FY 1995 - FY 1999		California	Management:	Internal Field	Staff from
butterfly			implement				Department of	General	Assistance	Creekside Center
(Euphydryas editha			appropriate				Parks and			for Earth
bayensis), Tiburon			management				Recreation,			Observation
mariposa lily			actions at multiple				California			working with Santa
(Calochortus			sites, for multiple				Department of			Clara Open Space
tiburonensis),			species				Transportation, City			Authority to
Metcalf Canyon			3,700.00				of San Jose,			develop new
jewelflower							California, City of			monitoring protocol
(Streptanthus							Tiburon, California,			for Dudleya
albidus ssp.							East Bay Regional			setchellii.
albidus), Pennell's							Park District, Marin			Sotorionii.
bird's-beak							County Open			Invasive plants are
(Cordylanthus							Space District,			being removed
tenuis ssp.							Marin Municipal			from Cirsium
capillaris), San							Water District,			fontinale var.
Mateo woolly							Midpeninsula			fontinale
sunflower							Regional Open			populations at
(Eriophyllum							Space District,			Stulsaft Park and
latilobum), Coyote							Rancho Santa Ana			CalTrans property
ceanothus							Botanic Garden,			near Woodside
(Ceanothus							San Francisco			Glens.
ferrisae), White-							Water Department,			
rayed pentachaeta							Tiburon Landmark			
(Pentachaeta							Society, University			
bellidiflora),							of California at			
Presidio clarkia							Berkeley, San			
(Clarkia							Mateo County,			
franciscana),							California,			
Fountain thistle							Stanislaus County,			
(Cirsium fontinale							California, Marin			
var. fontinale),							County, California,			
Tiburon paintbrush							San Francisco			
(Castilleja affinis							County, California,			
ssp. neglecta),							Santa Clara			
Marin dwarf-flax							County, California,			
(Hesperolinon							Contra Costa			
congestum),							County, California,			
Tiburon jewelflower							Alameda County,			
(Streptanthus					1		California, Sonoma			
niger), San Mateo							County, California,			
thornmint							National Park			
(Acanthomintha							Service, U.S. Fish			
l '					1		and Wildlife			
obovata ssp.										
duttonii), Santa							Service, California			
Clara Valley							Department of Fish			
dudleya (Dudleya							and Game, Private			
setchellii)	1	1				l	landowners	1		

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Bay checkerspot butterfly (Euphydryas editha bayensis), Tiburon mariposa lily (Calochortus tiburonensis), Metcalf Canyon jewelflower (Streptanthus albidus ssp. albidus), Pennell's bird's-beak (Cordylanthus tenuis ssp. capillaris), San Mateo woolly sunflower (Eriophyllum latilobum), Coyote ceanothus (Ceanothus ferrisae), White-rayed pentachaeta (Pentachaeta bellidiflora), Presidio clarkia (Clarkia franciscana), Fountain thistle (Cirsium fontinale var. fontinale), Tiburon paintbrush (Castilleja affinis ssp. neglecta), Marin dwarf-flax (Hesperolinon congestum), Tiburon jewelflower (Streptanthus niger), San Mateo thornmint (Acanthomintha obovata ssp. duttonii), Santa Clara Valley dudleya (Dudleya setchellii)	2	4.1	Establish a survey program and protocol for all species covered in the plan	Ongoing Current	FY 2007		California Department of Parks and Recreation, California Department of Transportation, City of San Jose, California, City of Tiburon, California, East Bay Regional Park District, Marin County Open Space District, Midpeninsula Regional Open Space District, Midpeninsula Regional Open Space District, Rancho Santa Ana Botanic Garden, San Francisco Water Department, Tiburon Landmark Society, University of California at Berkeley, San Mateo County, California, Stanislaus County, California, Marin County, California, San Francisco County, California, Santa Clara County, California, Contra Costa County, California, Contra Costa County, California, Cantra Costa County, California, Cantra Costa County, California, Cantra Costa County, California, California, Sonoma County, California, National Park Service, U.S. Fish and Wildlife Service, California Department of Fish and Game, Private landowners	Research: Population Surveys	Graduate Student	Monitoring protocol has been established at SF Presidio by GGNRA for Clarkia franciscana and Lessingia germanorum
Tiburon paintbrush (Castilleja affinis ssp. neglecta), Marin dwarf-flax (Hesperolinon congestum)	2	4.2.11	Conduct surveys in historic and potential habitat at Golden Gate National Recreation Area (Marin County) for multiple species	Ongoing Current	FY 1995 - FY 1999		National Park Service, U.S. Fish and Wildlife Service, California Department of Fish and Game	Research: Population Surveys	Graduate Student	Some monitoring occurs under Recovery Permit

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Tiburon mariposa lily (Calochortus tiburonensis), Tiburon paintbrush (Castilleja affinis ssp. neglecta), Marin dwarf-flax (Hesperolinon congestum), Tiburon jewelflower (Streptanthus niger)	2	4.2.18	Conduct surveys in historic and potential habitat on Tiburon Peninsula (Marin County) for multiple species	Not Started			City of Tiburon, California, Marin County, California, U.S. Fish and Wildlife Service, California Department of Fish and Game	Research: Population Surveys	Graduate Student	
Presidio clarkia (Clarkia franciscana), Marin dwarf-flax (Hesperolinon congestum)	2	4.2.19	Conduct surveys in historic and potential habitat on the Presidio (San Francisco County) for multiple species	Ongoing Current	FY 1995 - FY 1999		National Park Service, U.S. Fish and Wildlife Service, California Department of Fish and Game	Research: Population Surveys	Graduate Student	
Marin dwarf-flax (Hesperolinon congestum)	3	4.2.20	Conduct surveys in historic and potential habitat on San Francisco Peninsula (south of Presidio) (San Francisco County) for	Not Started			National Park Service, U.S. Fish and Wildlife Service, California Department of Fish and Game	Research: Population Surveys	Graduate Student	
Marin dwarf-flax (Hesperolinon congestum)	2	4.2.21	Conduct surveys in historic and potential habitat in area between San Andreas Lake and Crystal Springs Reservoir and to the west (San Mateo County) for multiple species	Not Started			San Mateo County, California, U.S. Fish and Wildlife Service, California Department of Fish and Game	Research: Population Surveys	Graduate Student	
Marin dwarf-flax (Hesperolinon congestum)	2	4.2.29	Conduct surveys in historic and potential habitat in Woodside Glens / Canada College (generally in the Woodside area) (San Mateo County) for Hesperolinon congestum	Not Started			U.S. Fish and Wildlife Service, California Department of Fish and Game	Research: Population Surveys	Graduate Student	
Marin dwarf-flax (Hesperolinon congestum)	2	4.2.9	Conduct surveys in historic and potential habitat at Alpine Lake / Carson Ridge (Marin County) for multiple species	Not Started			Marin Municipal Water District, U.S. Fish and Wildlife Service, California Department of Fish and Game	Research: Population Surveys	Graduate Student	

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Tiburon mariposa lily (Calochortus tiburonensis), Tiburon paintbrush (Castilleja affinis ssp. neglecta), Marin dwarf-flax (Hesperolinon congestum)	1	5.12	Conduct necessary research at Ring Mountain (Marin County) for multiple species	Not Started			Marin County, California, U.S. Fish and Wildlife Service, California Department of Fish and Game	Research: Management Techniques	Graduate Student	
Tiburon paintbrush (Castilleja affinis ssp. neglecta), Marin dwarf-flax (Hesperolinon congestum), Tiburon jewelflower (Streptanthus niger)	2	5.13	Conduct necessary research at St. Hilary's area (includes Harroman Property), Tiburon Peninsula (Marin County) for multiple species	Not Started			City of Tiburon, California, Marin County, California, U.S. Fish and Wildlife Service, California Department of Fish and Game	Research: Demographic Studies	Graduate Student	
Presidio clarkia (Clarkia franciscana), Marin dwarf-flax (Hesperolinon congestum)	1	5.15	Conduct necessary research at the Presidio (San Francisco County) for multiple species	Ongoing Current	FY 2007		National Park Service, U.S. Fish and Wildlife Service	Research: Habitat Requirements	Graduate Student	Conducting burn/scrape/tarp studies to benefit Presidio clarkia. Reintroduction efforts for Hesperolinon congestum have begun at Inspiration Pt. on the SF Presidio by Presidio Trust and Creekside Center for Earth Observation.
Bay checkerspot butterfly (Euphydryas editha bayensis), San Mateo woolly sunflower (Eriophyllum latilobum), White- rayed pentachaeta (Pentachaeta bellidiflora), Fountain thistle (Cirsium fontinale var. fontinale), Marin dwarf-flax (Hesperolinon congestum), San Mateo thornmint (Acanthomintha obovata ssp. duttonii)	1	5.16	Conduct research on vegetation management methods in selected areas county-wide (San Mateo county) for multiple species	Ongoing Current	FY 2008	FY 2010	U.S. Fish and Wildlife Service, California Department of Fish and Game	Research: Habitat Requirements	Contract	

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Bay checkerspot butterfly (Euphydryas editha bayensis), San Mateo woolly sunflower (Eriophyllum latilobum), Whiterayed pentachaeta (Pentachaeta bellidiflora), Fountain thistle (Cirsium fontinale var. fontinale), Marin dwarf-flax (Hesperolinon congestum), San Mateo thornmint (Acanthomintha obovata ssp. duttonii)	1	5.17	Conduct surveys in historic and potential habitat on San Francisco Peninsula (south of Presidio) (San Francisco County) for Hesperolinon congestum	Ongoing Current	FY 2000 - FY 2004		U.S. Fish and Wildlife Service	Research: Environmental Contaminants	Graduate Student	
Bay checkerspot butterfly (Euphydryas editha bayensis), San Mateo woolly sunflower (Eriophyllum latilobum), Whiterayed pentachaeta (Pentachaeta bellidiflora), Fountain thistle (Cirsium fontinale var. fontinale), Marin dwarf-flax (Hesperolinon congestum), San Mateo thornmint (Acanthomintha obovata ssp. duttonii)	2	5.18	Conduct necessary research at selected areas county-wide in San Mateo County on restoring native habitats on serpentine and non-serpentine soils (multiple species)	Not Started			San Mateo County, California, U.S. Fish and Wildlife Service, California Department of Fish and Game	Research: Reintroduction	Graduate Student	
Marin dwarf-flax (Hesperolinon congestum)	3	5.23	Conduct necessary research at Woodside Glens / Canada College (generally in the Woodside area) (San Mateo County) for	Not Started			U.S. Fish and Wildlife Service, California Department of Fish and Game	Research: Demographic Studies	Graduate Student	
Marin dwarf-flax (Hesperolinon congestum)	2	5.6	Review species listing status for species of concern Lessingia micradenia micradenia	Not Started			U.S. Fish and Wildlife Service, California Department of Fish and Game	Research: Habitat Requirements	Graduate Student	

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Tiburon paintbrush (Castilleja affinis ssp. neglecta), Marin dwarf-flax (Hesperolinon congestum)	2		Conduct necessary research at Golden Gate National Recreation Area (Marin County) for multiple species	Not Started				Research: Management Techniques	Graduate Student	
Marin dwarf-flax (Hesperolinon congestum)	2	5.9	Review species listing status for species of concern Marin micro-blind harvestman	Not Started			San Mateo County, California, U.S. Fish and Wildlife Service, California Department of Fish and Game	Research: Management Techniques	Graduate Student	